

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A human anti-human interleukin-6 (hereinafter, referred to as "IL-6") antibody that binds to human IL-6 and inhibits the biological activity thereof or a fragment of said antibody.

2. (Original) The human anti-human IL-6 antibody or a fragment of said antibody of claim 1 which has a dissociation constant of 1.0×10^{-8} M or less.

3. (Original) A gene fragment coding for a VH chain of a human anti-human IL-6 antibody that binds to human IL-6 and inhibits the biological activity thereof.

4. (Original) The gene fragment of claim 3 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Lys Tyr Tyr Met Ala (SEQ ID NO: 5)

CDR2: Thr Ile Ser Asn Ser Gly Asp Ile Ile Asp Tyr Ala Asp
Ser Val Arg Gly (SEQ ID NO: 6)

CDR3: Glu Tyr Phe Phe Ser Phe Asp Val (SEQ ID NO: 7).

5. (Currently Amended) The gene fragment of claim 3 ~~or 4~~ wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2.

6. (Currently Amended) The gene fragment of claim ~~4~~ or 5 wherein one or several amino acids are deleted, substituted or added in the amino acid sequence of said VH chain.

7. (Original) A gene fragment coding for a VL chain of a human anti-human IL-6 antibody that binds to human IL-6 and inhibits the biological activity thereof.

8. (Original) The gene fragment of claim 7 wherein complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ala Ser Gln Asp Ile Arg Asn Trp Val Ala (SEQ ID NO: 8)

CDR2: Asp Gly Ser Ser Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Asp Ser Thr Pro Ile Thr Phe (SEQ ID NO: 10).

9. (Currently Amended) The gene fragment of claim ~~7~~ or ~~8~~ wherein said VL chain has the amino acid sequence depicted in SEQ ID NO: 4.

10. (Currently Amended) The gene fragment of claim ~~8~~ or 9 wherein one or several amino acids are deleted, substituted or added in the amino acid sequence of said VL chain.

11. (Currently Amended) A gene fragment coding for a single chain Fv (hereinafter referred to as "scFv") of a

human anti-human IL-6 antibody that binds to human IL-6 and inhibits the biological activity thereof, said gene fragment consisting of ~~the~~ a gene fragment coding for ~~the~~ a VH chain of ~~any one of claims 3 to 6~~ said human anti-human IL-6 antibody bound to ~~the~~ a gene fragment coding for ~~the~~ a VL chain of ~~any one of claims 7 to 10~~ said human anti-human IL-6 antibody.

12. (Currently Amended) A gene fragment coding for a human anti-human IL-6 antibody that binds to human IL-6 and inhibits the biological activity thereof, said gene fragment consisting of ~~the~~ a gene fragment coding for ~~the~~ a VH chain of ~~any one of claims 3 to 6~~ said human anti-human IL-6 antibody bound to a human antibody CH chain gene and ~~the~~ a gene fragment coding for ~~the~~ a VL chain of ~~any one of claims 7 to 10~~ said human anti-human IL-6 antibody bound to a human antibody CL chain gene.

13. (Currently Amended) A gene fragment coding for a human anti-human IL-6 antibody fragment that binds to human IL-6 and inhibits the biological activity thereof, said gene fragment consisting of ~~the~~ a gene fragment coding for ~~the~~ a VH chain of ~~any one of claims 3 to 6~~ said human anti-human IL-6 antibody bound to a portion of a human antibody CH chain gene and ~~the~~ a gene fragment coding for ~~the~~ a VL chain of ~~any one of claims 7 to 10~~ said human anti-human IL-6 antibody bound to a portion of a human antibody CL chain gene.

14. (Original) The gene fragment of claim 13 wherein said antibody fragment is selected from Fab, Fab' or F(ab')₂.

15. (Original) A gene fragment coding for a human anti-human IL-6 antibody fragment that binds to human IL-6 and inhibits the biological activity thereof, said gene fragment consisting of the gene fragment coding for the scFv of claim 11 bound either to a portion of a human antibody CH chain gene or to a portion of a human antibody CL chain gene.

16. (Original) A human anti-human IL-6 antibody that binds to human IL-6 and inhibits the biological activity thereof or a fragment of said antibody, which is expressed by the genetic recombination technique from an expression vector in which the gene fragment of any one of claims 3 to 15 is incorporated.

17. (Original) The human anti-human IL-6 antibody or a fragment of said antibody of claim 16 which has a dissociation constant of 1.0×10^{-8} M or less.

18. (Currently Amended) An agent for inhibiting the binding between IL-6 and an IL-6 receptor comprising as an active ingredient the human anti-human IL-6 antibody or a fragment of said antibody of ~~any one of claims~~ claim 1 to 17.

19. (Original) A medicament for preventing or treating inflammation or immunopathy caused by the binding

In re Preliminary Amendment of:
Appln. No. 10/526,072

between human IL-6 and a human IL-6 receptor, said medicament utilizing the agent for inhibiting the binding of claim 18.

20. (New) The gene fragment of claim 11 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Lys Tyr Tyr Met Ala (SEQ ID NO: 5)

CDR2: Thr Ile Ser Asn Ser Gly Asp Ile Ile Asp Tyr Ala Asp Ser Val Arg Gly (SEQ ID NO: 6)

CDR3: Glu Tyr Phe Phe Ser Phe Asp Val (SEQ ID NO: 7)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ala Ser Gln Asp Ile Arg Asn Trp Val Ala (SEQ ID NO: 8)

CDR2: Asp Gly Ser Ser Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Asp Ser Thr Pro Ile Thr Phe (SEQ ID NO: 10).

21. (New) The gene fragment of claim 11 wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 4.

22. (New) The gene fragment of claim 21 wherein one or several amino acids are deleted, substituted or added in the amino acid sequences of said VH chain and/or said VL chain.

In re Preliminary Amendment of:
Appln. No. 10/526,072

ID NO: 10).

23. (New) The gene fragment of claim 12 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Lys Tyr Tyr Met Ala (SEQ ID NO: 5)

CDR2: Thr Ile Ser Asn Ser Gly Asp Ile Ile Asp Tyr Ala Asp
Ser Val Arg Gly (SEQ ID NO: 6)

CDR3: Glu Tyr Phe Phe Ser Phe Asp Val (SEQ ID NO: 7)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ala Ser Gln Asp Ile Arg Asn Trp Val Ala
(SEQ ID NO: 8)

CDR2: Asp Gly Ser Ser Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Asp Ser Thr Pro Ile Thr Phe (SEQ
ID NO: 10).

24. (New) The gene fragment of claim 12 wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 4.

25. (New) The gene fragment of claim 24 wherein one or several amino acids are deleted, substituted or added in the amino acid sequences of said VH chain and/or said VL chain.

In re Preliminary Amendment of:
Appln. No. 10/526,072

26. (New) The gene fragment of claim 13 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Lys Tyr Tyr Met Ala (SEQ ID NO: 5)

CDR2: Thr Ile Ser Asn Ser Gly Asp Ile Ile Asp Tyr Ala Asp Ser Val Arg Gly (SEQ ID NO: 6)

CDR3: Glu Tyr Phe Phe Ser Phe Asp Val (SEQ ID NO: 7)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ala Ser Gln Asp Ile Arg Asn Trp Val Ala (SEQ ID NO: 8)

CDR2: Asp Gly Ser Ser Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Asp Ser Thr Pro Ile Thr Phe (SEQ ID NO: 10).

27. (New) The gene fragment of claim 13 wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 4.

28. (New) The gene fragment of claim 27 wherein one or several amino acids are deleted, substituted or added in the amino acid sequences of said VH chain and/or said VL chain.

In re Preliminary Amendment of:
Appln. No. 10/526,072

29. (New) The gene fragment of claim 19 wherein complementarity determining regions (CDR1 to CDR3) of said VH chain have the following amino acid sequences:

CDR1: Lys Tyr Tyr Met Ala (SEQ ID NO: 5)

CDR2: Thr Ile Ser Asn Ser Gly Asp Ile Ile Asp Tyr Ala Asp Ser Val Arg Gly (SEQ ID NO: 6)

CDR3: Glu Tyr Phe Phe Ser Phe Asp Val (SEQ ID NO: 7)

and/or complementarity determining regions (CDR1 to CDR3) of said VL chain have the following amino acid sequences:

CDR1: Arg Ala Ser Gln Asp Ile Arg Asn Trp Val Ala (SEQ ID NO: 8)

CDR2: Asp Gly Ser Ser Leu Gln Ser (SEQ ID NO: 9)

CDR3: Gln Gln Ser Asp Ser Thr Pro Ile Thr Phe (SEQ ID NO: 10).

30. (New) The gene fragment of claim 15 wherein said VH chain has the amino acid sequence depicted in SEQ ID NO: 2 and/or said VL chain has the amino acid sequence depicted in SEQ ID NO: 4.

31. (New) The gene fragment of claim 30 wherein one or several amino acids are deleted, substituted or added in the amino acid sequences of said VH chain and/or said VL chain.

32. (New) An agent for inhibiting the binding between IL-6 and an IL-6 receptor comprising as an active

In re Preliminary Amendment of:
Appln. No. 10/526,072

ingredient the human anti-human IL-6 antibody or a fragment of said antibody of claim 16.

33. (New) A medicament for preventing or treating inflammation or immunopathy caused by the binding between human IL-6 and a human IL-6 receptor, said medicament utilizing the agent for inhibiting the binding of claim 32.